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RECORD OF ORAL HEARING

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex Parte KIMIYASU SATOH and HIROYUKI INOKAWA

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Appeal 2009-008795
Application 10/537,417
Technology Center 2600

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Oral Hearing Held: April 13, 2010

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Before MARC S. HOFF, CARLA M. KRIVAK, and THOMAS S. HAHN, *Administrative Patent Judges.*

APPEARANCES:

ON BEHALF OF THE APPELLANT:

KEVIN M. McKINLEY, ESQUIRE
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THE USHER: Calendar No. 13, Appeal No. 2009-008795. Mr. McKinley?

MR. McKINLEY: Thank you. I have a card.

JUDGE HOFF: Good morning.

MR. McKINLEY: Good morning, Your Honors. In this appeal, one of the important features of our invention, which we don't think is taught by the applied art in this case, is that we have a control portion, which is recited in Independent Claim 1 as well as Independent Claim 12, and what the control portion does is drives our operation surface in two directions. It's driven in one direction for a period of time, and then it's driven in a second direction for a different period of time, okay. The best -- I think the best figure to explain this briefly is our Figure 4. As you can see, the Y axis is the deformation amount of the operation surface. Before a user presses the operation surface, which is at T 401, you can see that the piezoelectric actuators do not curve. You can see the zero on the X axis. When the operation -- when the user presses the surface at T 401, you can see the gradual increase in deformation up to the time T 402 -- at that point, it reaches its maximum rise. And during this time, T 1, the actuator is driven to cause the operation surface to deform, in this case upwards, and like I said, until it reaches T 402 at the max rise. And then you can see between T 402 and T 403 for the time period T 2, it then decreases or is deformed in the reverse direction, and it's deformed in a max amount in the opposite direction. The deformation in the upper direction for T 1 is discussed in the specification on page 18, lines 22 to 25, and then the time period T 2 is discussed in the spec on page 19, lines 3 to 5. And what this feature does is when someone presses the operation surface, there is a gradual deformation over a longer period of time, T 1, in the direction that the user is -- against

the finger in the direction of the user's finger, and then it's quickly reversed direction and deformed in the opposite direction, and that's again T 2, and the gradual increase in the one direction towards the user's finger is not, according to the teaching in the spec, is not felt greatly by the user. But then when -- and then okay, I'm sorry, so it's not felt by the user as much, and then you achieve this maximum rise. But then there's a quick change to the maximum -- the other direction, the reverse direction, and the user can greatly feel the reverse direction movement, because it's over a shorter period of time, and it's deforming from a max position to the maximum lower position, and it gives the user a good click sense is how they describe it in the specification. So it indicates to the user that wherever they pressed, you know, they know that the device, whatever it is, has detected where they're pressing.

In the applied art -- I'm sorry, actually in the specification, I'll just read a paragraph which captures what I just talked about. On page 30 is one spot, teaches us the touch panel portion 2, and that's the top surface of the device, is deformed as shown in Figure 4, and that's what we just talked about. In other words, when the touch panel portion 2 is pressed, it's deformed in the reverse direction of which it is pressed. Thereafter, the touch panel 2 is largely deformed in the direction of which it is pressed. Immediately after the touch panel 2 portion is pressed, since it is gradually deformed, the user does not almost feel the deformation. Thereafter, when the touch panel portion is quickly deformed in the direction of which it is pressed in the claim language, reverse direction, the user feels a clear click sense. As a result, since the user can feel a more natural and clear click sense than he or she can do with the radar, the user's operational sense is

improved. In addition, the noise level decreases, and it also has a function of conserving power in the way this operates.

In the Examiner's Answer to just begin discussion of the applied art, on page 9 in paragraph 10, response to argument, the Examiner respectfully disagrees with the statement that teaches -- that we argue that didn't teach this feature, Shigeki, S-h-i-g-e-k-i, teaches that an input device where a control portion, in paragraph 46, controls the deformation mechanism to start driving the actuator to gradually deform the operation surface in one direction. Then the Examiner puts (pressed by finger). So I mean the Examiner appears to admit that it's not being driven in the first direction. It's actually just -- it's being pressed. There's no control portion that is driving the actuator to deform the surface in the one direction. And the Examiner goes on to say and then in the reverse direction back to the original position when not pressed. Then the Examiner says Shigeki does not teach that the input device is a piezoelectric actuator. The Examiner then goes on to talk about Yoshitaka, which is the second reference, and the Examiner points to paragraphs, among other paragraphs, 50 and 51, but there doesn't seem to be a clear -- I'm sorry, actually, let me back up for a second. Let me go back to the reference Shigeki. The Examiner does point to paragraphs 0040 for teaching this feature of driving it in one direction and driving it in the second direction. However, in paragraph 0040, what Shigeki is using is a bobbin coil to, as they say it, as a sense of force device, and user's finger 19 is put back to a user's side. So what this does is it will drive the surface towards the user's finger and that's it. It just allows the user to know that it's been pressed. And again, towards the end of paragraph 0040, as sign 5 showed, sign 5 is shown in thrust curves in the drawings. User's finger 19 is put back

to the user's side, and a user can perceive having been inputted as a sense of force. So basically, what Shigeki is teaching is to resist a user's finger when it's pressed on the surface. Again, this is -- our argument is that this is teaching only one direction.

The second reference of Yoshitaka it's -- as I alluded to earlier, it's unclear exactly how the Examiner is applying this, but the paragraphs 50 and 51, which are discussed in the Office Actions and also in the Examiner's Answer, teach -- appear to teach that what it talks about in 50 and 51 is determining the location of the pressing of the finger on the control surface. And it's determining the location point P(XY) and a thrust force def (phonetic sp.) is assumed. It's not -- and then actually the next paragraph 51 teaches again just more about determining the XK and YK coordinates from the value of the pressing of the -- by the user. And what I gather from this reference is what it does is determines the location of the person pressing and also the thrust force applied by the user, and when the force is greater than some threshold value, then a signal , I'll read from the abstract, a high-frequency is applied to the piezoelectric elements E134, and thus the operation surface is vibrated. So -- but in none of the Office Actions or in the Examiner's Answer did he discuss a vibration. It's unclear how he's -- how is he -- how he's using this reference in addition to the teaching of Shigeki. However, even with that possible reasoning by the Examiner, there's still no teaching in either of those two references we've discussed so far that talks about having the time difference driven in one direction for a sufficiently larger period of time than being driven in the reverse direction as claimed.

To that point, the Examiner actually admits on the back page in the Examiner's Answer, page 5, Shigeki (as modified by Yoshitaka) does not teach a period for which the operation surface is deformed in one direction is sufficiently larger than a period for which the operation surface is deformed in the reverse direction when said pressed force detection portion detects the operation surface has been pressed. The Examiner goes on to use this Divigalpitiya reference to make up for these deficiencies. However, we disagree that it does. In paragraph -- the Examiner cites to paragraph 33, but also in paragraph 0029 and 0033, the -- this third reference, Divigalpitiya, is teaching in Figure 1 an electronic device. And Figure 1 merely shows the surface -- first conductor surface 110, second conductor 120, with a gap in between 130 which is made of some composite material. And in paragraph 29, it begins a discussion of what this composite material is made up of. The composite material disposed between the two conductors includes conductive particles at least partially embedded in the insulating material as discussed in 2933. The insulating material preferably has a deformability and a resiliency that allows electrical contacts to be made upon the application of pressure and the electrical contacts to be broken when the pressure is released. That's also discussed in the beginning of paragraph 33, and in the middle of paragraph 33, it is preferable that both response time described as the time it takes to activate the device upon application of sufficient pressure and the relaxation time of the device described as the time it takes to restore an open circuit upon cessation of sufficient pressure are sufficiently fast given the particular application so that another input can be registered at the same location within the desirable amount of time.

So what this reference is merely teaching is picking an appropriate material, and the surface is merely restored through resiliency to its original position. It's not being driven by an actuator in -- for over a period of time, and even if there's reference to teach it, as I just read, both the response time and the relaxation time are sufficiently fast. So it appears to teach that they're the same rate as opposed to one being sufficiently larger than the other as claimed. So even if the combination of the three references still don’t teach in our view about deforming a surface one direction, deform it in a reverse direction, one time sufficiently larger than the second time as claimed in and as I discussed with respect to Figure 4.

That's all the comments I had about our claimed features.

JUDGE HOFF: Judge Krivak, do you have questions?

JUDGE KRIVAK: Let me just take a quick look here.

No, no more -- no questions.

JUDGE HOFF: Judge Hahn?

JUDGE HAHN: I have none.

JUDGE HOFF: Thank you for your time.

MR. McKINLEY: Thank you very much.

JUDGE KRIVAK: Thank you very much.

Whereupon, the proceedings, at 11:18 a.m., were concluded.